

WHAT IS CLAIMED IS:

- 1 1. A multiple core exchanger of thermal energy, through which
2 a medium passes to exchange thermal energy with fluid flowing through channels
3 of one or more of the multiple cores of the multiple core exchanger of thermal
4 energy, the multiple core exchanger of thermal energy comprising:
5 a first core having a plurality of first channels through which a first
6 fluid flows and a first fin disposed between at least some of the first channels to
7 facilitate an exchange of thermal energy between the first fluid and the medium;
8 a second core in thermal communication with the first core, the
9 second core having a plurality of second channels through which a second fluid
10 flows and a second fin disposed between at least some of the second channels to
11 facilitate an exchange of thermal energy between the second fluid and the medium;
12 the second fin being integrally formed with the first fin so that the
13 second fin has a shape which complements that of the first fin; and
14 a thermal break comprising a slit.
- 1 2. The multiple exchanger of thermal energy of claim 1, further
2 having:
3 a thermal fuse which locally connects the first and the second fins
4 between adjacent edges of the first and second fins.
- 1 3. The multiple core exchanger of thermal energy of claim 1,
2 further comprising:
3 at least one louver defined within one or more of the fins extending
4 at least partially between a pair of opposing edges thereof;
- 1 4. The multiple core exchanger of thermal energy of claim 1,
2 wherein the first and second cores respectively serve as a condenser and a radiator;
3 the first fin has a width (L_1);
4 the second fin has a width (L_2); and
5 L_1 is less than or equal to L_2 .

1 5. The multiple core exchanger of thermal energy of claim 1,
2 wherein the first and second cores respectively serve as a condenser and a radiator;
3 the first fin has a width (L_1),
4 the second fin has a width (L_2); and
5 L_1 is greater than L_2 .

1 6. The multiple core exchanger of thermal energy of claim 1,
2 wherein the first core and the second core are selected from one or more of the
3 group consisting of an oil cooler, a transmission cooler, a radiator, a condenser, a
4 charge air cooler, an evaporator, a heater core, and combinations thereof.

1 7. The multiple core exchanger of thermal energy of claim 2,
2 wherein the thermal fuse is formed of a generally rectangular section of material
3 having an edge (X) and an edge (Y) wherein the length of X is greater than or equal
4 to that of Y.

1 8. The multiple core exchanger of thermal energy of claim 2,
2 wherein the thermal fuse is formed of a generally rectangular section of material
3 having an edge (X) and an edge (Y) wherein the length of X is less than that of Y.

1 9. The multiple core exchanger of thermal energy of claim 2,
2 wherein the thermal fuse is formed of edges which are curvilinear.

1 10. The multiple core exchanger of thermal energy of claim 2,
2 wherein the thermal fuse is formed of an homogeneous material.

1 11. The multiple core exchanger of thermal energy of claim 2,
2 wherein the thermal fuse is formed of a non-homogeneous material.

1 12. The multiple exchanger of thermal energy of claim 2, wherein
2 the thermal fuse comprises a portion of material continuity for promoting stability
3 during construction of the exchanger of thermal energy, the material continuity
4 having the characteristic of being frangible.

1 13. The multiple core exchanger of thermal energy of claim 3,
2 wherein at least some of the at least one louvers are situated other at least partially
3 across the elongated strip, opposing arrays being separated from each other by the
4 thermal break.

1 14. The multiple core exchanger of thermal energy of claim 3,
2 wherein the at least one louver is located within only one of the cores.

1 15. A multiple core heat exchanger through which a cooling
2 medium passes comprising:

3 a first heat exchanger core having a plurality of first channels through
4 which a first fluid flows and a first fin disposed between adjacent first channels to
5 facilitate heat exchange between the first fluid and the cooling medium, the first fin
6 having a corrugated shape including first upper folds, first lower folds, a first wall
7 extending between one of the first upper folds and one of the first lower folds, and
8 a first array of louvers extending from the first wall;

9 a second heat exchanger core disposed downstream of the first heat
10 exchanger core, the second heat exchanger core having a plurality of second
11 channels through which a second fluid flows and a second fin disposed between
12 adjacent second channels to facilitate heat exchange between the second fluid and
13 the cooling medium, the second channels extending substantially parallel with the first
14 channels, the second fin being integrally formed with the first fin so that the second
15 fin also has a corrugated shape with second upper folds, second lower folds and a
16 second wall which connects one of the second upper folds and one of the second lower
17 folds, and a second array of louvers extending from the second wall;

18 a thermal break comprising a slit formed without removal of material
19 between the first and second upper and lower folds, and the first and second walls,
20 thereby inhibiting the flow of heat energy across the first and second fins; and

21 a thermal fuse which locally connects the first and the second fins.